Chapter 21

Comparison Of Alternatives

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Chapter 21
Comparison of Alternatives

NEPA requires lead agencies to identify the environmentally preferable alternative from the range of alternatives analyzed in an EIS. The *environmentally preferable alternative* refers to the alternative that would best accomplish NEPA's goals of minimizing adverse effects on the environment, and protecting natural and cultural resources. Identification of the environmentally preferable alternative is based on a comparison of the anticipated environmental outcomes of all alternatives analyzed. In many cases, this is necessarily a largely subjective evaluation. In addition, for some proposed actions, the environmentally preferable alternative may be different for different environmental resources.

Much like NEPA, the state's CEQA guidelines require the lead agency to identify the *environmentally superior alternative*, or the alternative that would least affect the environment while accomplishing project objectives. As with the environmentally preferable alternative, the environmentally superior alternative is identified on the basis of a comparison between the environmental impacts of the various alternatives analyzed. If the No Project Alternative is identified as environmentally superior but would not meet project objectives, the lead agency must also identify the environmentally superior alternative that would implement the project (CEQA Guidelines Sec. 15126.6[a], [e]). In addition, the proposed project itself cannot be identified as the environmentally superior alternative, although the lead agency is expected to compare the environmental risks and benefits of the proposed approach with those of the environmentally superior alternative approach.

Consistent with NEPA and CEQA requirements, the purpose of this chapter is to identify the environmentally preferable/environmentally superior alternative.

Comparison of Alternatives

To facilitate comparison among alternatives, the matrix in Table 21-1 summarizes the environmental outcomes expected for the three action alternatives and the No Action Alternative, including both adverse and beneficial effects, as presented in Chapters 3 through 19 of this EIS/EIR. The discussion in Table 21-1 includes comparison between each alternative and the proposed action.

Identification of Environmentally Preferable/Environmentally Superior Alternative

Methodology

As identified above, Table 21-1 presents a summary comparison of the proposed action, the three action alternatives, and the No Action Alternative. This provides the basic context for identifying the environmentally preferable/environmentally superior alternative, but additional detail at a resource-specific level is needed. This was obtained by assessing each impact individually to identify the alternative that would offer the best outcome for that specific concern. A resource was considered to "prefer" an alternative when outcomes for the majority of impacts related to that resource would be best under a particular alternative. If more than one alternative was "preferred" by a resource (i.e., there was no clear majority), outcomes were weighed qualitatively to determine which alternative would offer the greatest environmental benefit with the least environmental detriment. Resource-specific results were then tallied to assess the "score" for each alternative. Because of the proposed action's focus on protection and conservation of sensitive biological resources, potential biological benefits were considered the final deciding factor.

Outcome

Results by Impact and Resource

Table 21-2 (see following pages) summarizes results by impact and by resource.

Alternatives 3 (HCP with Reduced Number of Covered Species) and 4 (No Action) were evaluated as likely to be less effective overall in reducing and compensating for take, because they would provide less coordinated conservation planning (see additional discussion in Table 21-1). For some resources, additional concerns could be associated with decreased conservation efficiency. Neither alternative would offer environmental benefits to offset these detriments. These considerations generally eliminated Alternative 3 and Alternative 4 from further evaluation.

In general, Alternative 1 was found to be environmentally preferable when increased compensation acreages were identified as potentially problematic for a resource, because Alternative 1 would reduce take by comparison with the proposed action, without increasing the compensation ratio. By contrast, Alternative 2 would be preferable for resources benefited by increased acreage of compensation lands. Additional discussion is presented in the following paragraphs.

Table 21-1. Comparison of Anticipated Environmental Effects—Alternatives 1 through 4

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
Land Use	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action with minor differences specific to HCP commitments for the protection of biological resources. Specifically, under Alternative 1, compensation ratios for loss or disturbance of habitat would be the same as those described for the proposed action, but AMMs would be implemented more comprehensively. Although the level of take would be reduced because of the increased stringency in implementing the HCP's AMMs, compensation acreages are expected to be similar under both alternatives because compensation would be calculated based on acreage of disturbance, not level of take. Consequently, under Alternative 1, impacts related to land use would be similar to those described for the proposed action.	Like Alternative 1, Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Differences between Alternative 2 and the proposed action center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action, as described in Chapter 2). Alternative 2's emphasis on compensation would entail a greater compensation acreage at a given level of disturbance, and could result in the establishment of a greater number of preserves or preserves that encompass larger geographic areas by comparison with the proposed action. Nonetheless, consultation with appropriate local jurisdiction land managers would minimize or avoid substantial conflicts with existing and planned land uses and with applicable land use policies and plans. Therefore, impacts related to land use would be similar under Alternative 2 to those described for the proposed action, despite the greater geographic area potentially affected under Alternative 2.	Alternative 3 would enable the same program of O&M and minor construction activities described for the proposed action, and would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR. The key difference between Alternative 3 and the proposed action relates to the number of species covered under Alternative 3 (reduced by comparison with the proposed action, as described in Chapter 2). Depending on their status at the time, other species might be subject to state, and possibly also federal, requirements for impact assessment and compensation, which would need to be addressed on a case-by-case basis. Reducing the number of HCP-covered species could result in the establishment of a smaller number of preserves or preserves that encompass smaller geographic areas by comparison with the proposed action. At the same time, additional, case-by-case assessment of compensation needs might be required for any individual activities identified as having the potential to affect noncovered special-status species. However, criteria for identifying suitable compensation lands would remain the same and selection of appropriate compensation lands would be subject to essentially the same agency approval process. Further, PG&E's commitment to consult with local jurisdictions regarding land use planning issues would carry forward. Thus, although it might be more difficult to achieve efficient land use planning and ensure consistency of compensation uses with other existing and planned uses, the net effect on land use under Alternative 3 would be similar to that identified for the proposed action. .	Under the No Action Alternative, PG&E would continue its existing program of O&M activities and current environmental programs and practices, including BMPs, unchanged. No HCP would be implemented, and no other new environmental commitments would be put in place. Individual activities with the potential to affect threatened and/or endangered species would be assessed on a case-by-case basis through consultation with USFWS and DFG for level of effect and compensation needs. Because compensation requirements would be assessed on a case-by-case basis, smaller parcels of land would probably be identified for enhancement at any given time, but case-by-case assessment could also result in identification of a larger number of parcels for compensation use. This is similar to but more extreme than the scenario described above for Alternative 3, where most compensation would likely occur under the auspices of an HCP process. Criteria for identifying suitable compensation lands would likely be similar to those described for the proposed action, and selection of appropriate compensation lands would be subject to the same agency approval process. Moreover, PG&E would still consult with local jurisdiction land managers in an attempt to minimize or avoid land use conflicts. Thus, outcomes for land use would probably be broadly similar under the No Action Alternative to those described for the proposed action. However, the area affected could vary, and with no HCP (and hence, no centralized conservation planning process) in place, it would probably be substantially more difficult to achieve efficient land use planning and ensure consistency of compensation uses with other existing and planned uses.
Agricultural Resources	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences in the commitments for protection of biological resources. Alternative 1 would enact the same environmental commitments for other resource areas identified in this EIS/EIR for the proposed action, and compensation ratios for loss or disturbance of habitat would also be the same. The key difference between the proposed action and Alternative 1 is that Alternative 1 would implement avoidance and minimization measures (AMMs) at a lower level of effect than the proposed action, with the intent of reducing take. Although the level of take would be reduced because of the increased stringency associated with implementation of the AMMs, compensation needs are expected to be similar under both alternatives, because compensation acreages would be based on acreage affected rather than level of take. Consequently, under Alternative 1, impacts on agricultural resources would be similar to those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities and the same environmental commitments for other resource areas identified in this EIS/EIR for the proposed action. Differences between Alternative 2 and the proposed action center on compensation ratios for habitat disturbed or lost (greater under Alternative 2 than under the proposed action). Under Alternative 2, assuming the same level of habitat disturbance, overall compensation requirements would be higher than under the proposed action, although criteria for identifying suitable compensation lands would remain the same and selection of appropriate compensation lands would be subject to the same agency approval. As the demand for compensation lands increases, availability of lands that support the appropriate habitat types can be expected to decrease, both within and outside of PG&E ROWs. However, where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would be still available (i.e., purchase of mitigation credits, donations, and enhancement), and might be more extensively used; reliance on compensation options other than acquisition by purchase or easement might offset some of the difference in compensation needs. Nonetheless, the enhanced compensation requirements under Alternative 2 would result in greater overall compensation requirements and, as a result, could lead to the establishment of a greater number and/or larger acreage of preserves. Consequently, impacts on agricultural resources would likely be slightly greater under Alternative 2 than those described for the proposed action, when viewed from a NEPA perspective. Impacts under CEQA would be the same; that is, less than significant. This is because the physical attributes of agricultural/grazing lands that may be acquired for habitat compensation use under the proposed action would not be lost or otherwise altered by the proposed action, although they would be	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action, and would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR. The key difference between Alternative 3 and the proposed action relates to the number of species covered under Alternative 3 (reduced by comparison with the proposed action, as described in Chapter 2). Depending on their status at the time, other species might be subject to state, and possibly also federal, requirements for impact assessment and compensation, which would need to be addressed on a case-by-case basis. Under Alternative 3, reducing the number of covered species could result in the establishment of a smaller number of preserves or preserves that encompass smaller geographic areas by comparison with the proposed action. At the same time, additional, case-by-case assessment of compensation needs might be required for any individual activities identified as having the potential to affect noncovered special-status species. It is difficult to determine the precise effect that this approach would have on agricultural lands since detailed compensation needs cannot be identified at this time. However, because Alternative 3 could require the assessment of at least some compensation needs on a case-by-case basis, it could result in the identification of smaller parcels of land (including ROW areas) for enhancement use, compared to the proposed action. Also, while Alternative 3 could result in smaller contiguous areas for acquisition and/or enhancement use, more numerous acquisitions could also occur under Alternative 3. Depending on availability of appropriate habitat, multiple land acquisitions and/or enhancement areas could potentially be scattered throughout the action area. As the demand for compensation lands increases, availability of lands that support the appropriate habitat types can be expected to decrease, including areas within PG&E ROWs. Where appropriate and	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new or additional environmental commitments would be put in place. Individual actions affecting suitable habitat for listed special-status species would be assessed through case-by-case consultation with USFWS and DFG for level of effect and compensation needs. Because the compensation requirements for habitat disturbance would be assessed on a case-by-case basis, smaller parcels of land would likely be identified for acquisition or enhancement at any given time, but case-by-case assessment could also result in a need for more numerous parcels, potentially distributed over a wider area. This is similar to but more extreme than the case described above for Alternative 3, where most compensation would likely occur under the auspices of an HCP process. The availability of desirable compensation lands is expected to decrease over time, as lands are used for compensation or other purposes. However, as described for the action alternatives, where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would likely still be available (e.g., purchase of mitigation credits, donations, and enhancement). Because of the need for activity-by-activity consultation, the No Action Alternative would have the potential to result in some permanent loss of agricultural resources in the action area, and the overall nature of effects would be similar to that described above for the proposed action. However, the degree of impact is uncertain. Adverse effects on agricultural resources could be slightly reduced under the No Action Alternative compared to the proposed action since suitable compensation lands might be more difficult to acquire

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
		managed to benefit biological resources as opposed to focused solely on the production of agricultural commodities. In this sense, acquisition and management of agricultural/grazing lands to benefit biological resources is not expected to result in a significant impact on the environment associated with the loss of agricultural land.	available compensation lands cannot be identified for purchase or easement, other compensation options would still be available (e.g., purchase of mitigation credits, donations, and enhancement); reliance on compensation options other than acquisition by purchase or easement could offset some of the difference in compensation needs. However, criteria for identifying suitable compensation lands would remain the same, and selection of appropriate compensation lands would be subject to USFWS and DFG approval. Alternative 3 would thus have some potential to permanently affect agricultural lands (and particularly grazing lands) in the action area, and impacts could be spread over a wider area because more activity-by-activity compensation could be required. Impacts related to agricultural resources would probably be essentially the same or slightly greater under Alternative 3 compared to those described for the proposed action, when viewed from a NEPA perspective. As described for Alternative 2, impacts under CEQA would be the same; that is, less than significant. This is because the physical attributes of agricultural/grazing lands that may be acquired for habitat compensation use under the proposed action would not be lost or otherwise altered by the proposed action, although they would be managed to benefit biological resources as opposed to focused solely on the production of agricultural commodities. In this sense, acquisition and management of agricultural/grazing lands to benefit biological resources is not expected to result in a significant impact on the environment associated with the loss of agricultural land.	on a case-by-case basis, and smaller parcels might be less likely to meet the biological objectives of compensation; accordingly, payment-type compensation options might be used to a greater degree. It is difficult to assess the precise effect that this approach would have on agriculture because locations and other details about specific habitat enhancement sites are unknown at this time, as are the actual compensation acreages that would be required. Alternatively, if payment-type compensation options were not emphasized, the case-by-case approach to compensation determination under the No Action Alternative would result in a greater number of acquisitions/enhancements, some or all of which could be located on agricultural (largely grazing) lands. Consequently, impacts on agricultural resources could be slightly greater under the No Action Alternative than those described for the proposed action when viewed from a NEPA perspective. As described above for the action alternatives, impacts under CEQA would be the same in this case; that is, less than significant. This is because the physical attributes of agricultural/grazing lands that may be acquired for habitat compensation use under the proposed action would not be lost or otherwise altered by the proposed action, although they would be managed to benefit biological resources as opposed to focused solely on the production of agricultural commodities. In this sense, acquisition and management of agricultural/grazing lands to benefit biological resources is not expected to result in a significant impact on the environment associated with the loss of agricultural land.
Biological Resources	Alternative 1 would enable the same program of O&M and minor construction activities analyzed for the proposed action; differences between Alternative 1 and the proposed action center on mechanisms for avoiding take. Specifically, Alternative 1 focuses on increased avoidance of take, and would require much more comprehensive and stringent implementation of the HCP's AMM program, which would benefit both covered and noncovered special-status species, and would likely also provide corollary benefits for common species. Impacts on special-status species (covered and noncovered), identified as less than significant for the proposed action, are expected to be further reduced under Alternative 1. Impacts on common species, also expected to be less than significant under the proposed action, would likely also be somewhat reduced under Alternative 1.	Like Alternative 1, Alternative 2 would enable the same program of O&M and minor construction activities analyzed for the proposed action. Alternative 2 would also implement the same AMMs; however, because Alternative 2 stresses increased compensation for unavoidable habitat losses, habitat compensation requirements would be substantially increased under Alternative 2. As a result, impacts on biological resources would be essentially the same under Alternative 2 as those described for the proposed action, but temporary and permanent habitat losses would be compensated at a higher ratio, so a greater acreage of compensation lands (with corollary benefits for covered, noncovered, and common species) would accrue under Alternative 2.	Alternative 3 would enable the same program of O&M and minor construction activities analyzed for the proposed action and the other action alternatives. The key difference between Alternative 3 and the proposed action is that a smaller number of species would be covered under the Alternative 3 HCP; AMMs and habitat compensation would otherwise be essentially the same as those described for the proposed action. Because the Alternative 3 HCP would protect fewer special-status species, it would provide less corollary protection for noncovered special-status species and common species, and would likely require less habitat compensation over the long term. Impacts on biological resources could thus be somewhat greater under Alternative 3 than under the proposed action.	Under the No Action Alternative, PG&E would continue O&M and minor construction activities for its San Joaquin Valley natural gas and electricity facilities without implementing a program-wide HCP. Instead, potential take of threatened and endangered species would continue to be addressed on a case-by-case basis, pursuant to the requirements of ESA Section 7 and Section 2081 of the California Fish and Game Code. Through the consultation process, PG&E would likely address impacts on many or all of the species included in the proposed HCP and discussed in this EIS/EIR. Measures implemented to avoid, minimize, and mitigate impacts on special-status species, would likely also help to reduce or avoid impacts on common species. The general types of impacts on natural vegetation, special-status species, and common species expected under the No Action Alternative would be very similar to those identified above for the proposed action. The key differences are (1) no new AMMs would be implemented to buffer potential impacts, so impacts are more likely to be significant; and (2) potential take would be dealt with on a case-by-case basis rather than through a coordinated conservation program. Consequently, conservation efforts under the No Action Alternative would be less integrated; in particular, the purchase of conservation lands would probably be more fragmented. While case-by-case mitigation might be effective at targeting and preserving localized high-value habitat, the creation of a large number of smaller mitigation sites could result in less effective species conservation across the action area as a whole. Conservation lands would be less likely to offer preferred conditions such as larger contiguous areas of habitat or connectivity with other open space or conservation areas. This would be of particular concern for species such as the San Joaquin kit fox that require large areas of habitat or corridors allowing them to travel between areas of suitable habitat. The absence of a comprehensive monitoring and adaptive management program would also reduce opportunities to ensure the success of mitigation sites. In summary, because the No Action Alternative would approach conservation on a case-by-case basis, it would not offer the advantages of integrated regional conservation planning provided by the action alternatives. Outcomes for all categories of habitats and

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
				wildlife are more likely to be adverse/significant under the No Action Alternative.
Aesthetics	Alternative 1 would enable the same program of O&M and minor construction activities as the proposed action. Consequently, Impacts AES1 through AES5 would be the same under Alternative 1 as those described above for the proposed action. Differences between Alternative 1 and the proposed action center on the strategy for mitigating the biological effects of PG&E's O&M and minor construction activities; Alternative 1 stresses reducing take. However, although the level of take would be reduced because of the increased stringency associated with implementation of the AMMs, compensation needs are expected to be similar under both alternatives because compensation acreages would be calculated based on acreage affected, not level of take. Consequently, under Alternative 1, impacts related to aesthetic resources would be similar to those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as the proposed action. Consequently, as with Alternative 1, Impacts AES1 through AES6 would be the same under Alternative 2 as those described above for the proposed action. Differences between Alternative 2 and the proposed action center on the strategy for mitigating the biological effects of PG&E's O&M and minor construction activities; Alternative 2 would entail compensation at higher ratios than the proposed action, and thus is expected to require substantially larger compensation acreages. Aesthetic benefits related to the preservation of natural open space would thus be maximized under Alternative 2.	Alternative 3 would enable the same program of O&M and minor construction activities as the proposed action; Impacts AES1 through AES6 would thus be the same under Alternative 3 as those described above for the proposed action. The key difference between Alternative 3 and the proposed action is that the Alternative 3 HCP would cover a smaller number of species, so the compensation acreages required under the Alternative 3 HCP are likely to be somewhat less. However, PG&E could still be required to consult separately with the U.S. Fish and Wildlife Service regarding potential take of other special-status species not covered by the Alternative 3 HCP, and any such consultation could result in the identification of additional habitat compensation needs; as identified in Chapter 3 (*Land Use and Planning*), the net result of Alternative 3 could be the preservation of a somewhat larger number of smaller and more areally distributed parcels compared to the larger, more consolidated preserve acreages anticipated under the proposed action. Smaller, more widely distributed preserves could ultimately result in benefits to more viewers. On the other hand, smaller, more areally distributed preserves could be less aesthetically effective than larger parcels. In summary, it is difficult to predict benefits under Alternative 3, but it is likely that they would be slightly less than those offered by the proposed action.	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. Impacts AES1 through AES6 would be essentially the same under the No Action Alternative as those described above for the proposed action. No HCP would be implemented under the No Action Alternative, but PG&E would nonetheless be required to obtain permits for any incidental take of special-status species on a case-by-case basis. As described in Chapter 1 (*Introduction*), the permitting process would require conservation planning and consultation with USFWS, with the expectation that habitat losses would be compensated at ratios similar to those required under the proposed action. There would thus be some potential for aesthetic benefits related to the preservation of natural open space under the No Action Alternative. However, because conservation planning would be less centralized, and habitat preservation would occur in a less systematic way, smaller acreages would probably be preserved at any one time. The scenario for the No Action Alternative would be similar to that for Alternative 3, but is likely to result in even less centralized compensation planning. As described for Alternative 3, if compensation lands were widely distributed, they could ultimately benefit more viewers than would benefit from larger, more consolidated preserves. On the other hand, smaller, more areally distributed preserves could be less aesthetically effective than larger ones. In summary, aesthetic benefits under the No Action Alternative are difficult to predict, but are likely to be less marked than those offered by any of the action alternatives.
Geology and Soils	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. The same program of BMPs, and the same regulatory protection including codes and standards, would continue to apply. Consequently, impacts related to geology and soils would be essentially the same under Alternative 1 as those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action. Differences between Alternative 2 and the proposed action would center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). As with Alternative 1, the same program of BMPs and the same regulatory protection, including codes and standards, would continue to apply. Thus, impacts related to geology and soils would be essentially the same under Alternative 2 as those described for the proposed action.	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action. The key difference between Alternative 3 and the proposed action would relate to the number of species covered under the Alternative 3 (reduced by comparison with the proposed HCP, as described in Chapter 2). As described for the other action alternatives, the same program of BMPs and the same regulatory protection, including codes and standards, would continue to apply. Impacts related to geology and soils would be essentially the same under Alternative 3 as those described for the proposed action.	Under the No Action Alternative, PG&E would continue its existing program of O&M and minor construction activities unchanged. No HCP would be implemented, and no other new environmental commitments would be put in place. However, as identified for the three action alternatives, the same program of BMPs and the same regulatory protection, including codes and standards, would continue to apply under the No Action Alternative. Impacts related to geology and soils would thus be essentially the same under Alternative 4 as those described for the proposed action.
Water Resources	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 1 would incorporate the same environmental commitments for water resources protection identified in this EIS/EIR for the proposed action. Consequently, any adverse effects on water resources would be essentially the same under Alternative 1 as those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action. Differences between Alternative 2 and the proposed action would center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). Alternative 2 would incorporate the same environmental commitments for water resources protection identified in this EIS/EIR for the proposed action. As with Alternative 1, any adverse effects on water resources would be essentially the same under Alternative 2 as those described for the proposed action. Alternative 2 could offer a slight benefit for water resources by comparison with the proposed action and action alternatives, because its enhanced compensation ratios would maximize the preservation of natural drainage patterns and permeable natural surfaces, and preserve the greatest area from recontouring, cultivation, development and other types of ground disturbance.	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action. The key difference between Alternative 3 and the proposed action would relate to the number of species covered under the Alternative 3 HCP (reduced by comparison with the proposed HCP, as described in Chapter 2), which would likely reduce the total compensation acreage preserved. Alternative 3 would incorporate the same environmental commitments for water resources protection identified in this EIS/EIR for the proposed action. Any adverse effects on water resources would be essentially the same under Alternative 3 as those described for the proposed action. Potential benefits related to preservation of compensation lands would be less than those afforded under Alternative 2, and probably also less than those under the proposed action.	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new or environmental commitments in addition to those already in place would be put implemented. However, PG&E would continue to follow the same standard methods and techniques for carrying out O&M activities, and would continue to implement the company's existing environmental programs, practices, and BMPs, and the same regulatory protection would apply. Therefore, impacts on water resources would be very similar under Alternative 4 to those described for the proposed action. Slight differences could result from variations in compensation requirements, but would be speculative to predict at this time.
Cultural Resources	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. PG&E's current cultural resources program would continue in force under Alternative 1. Consequently, impacts on cultural resources would be essentially the same under Alternative 1 as those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action, and PG&E's current cultural resources program would continue in force under Alternative 2. Differences between Alternative 2 and the proposed action would center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). As with Alternative 1, impacts on cultural resources would be similar under Alternative 2 to those described for	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action, and PG&E's current cultural resources program would also continue in force under Alternative 3. The key difference between Alternative 3 and the proposed action would relate to the number of species covered under the Alternative 3 (reduced by comparison with the proposed HCP, as described in Chapter 2). Impacts on cultural resources would be similar under Alternative 3 to those described for	Under the No Action Alternative, PG&E would continue its existing program of O&M and minor construction activities unchanged, but no HCP would be implemented, and any habitat compensation would occur on a case-by-case, piecemeal basis. The company's existing cultural resources program—including pre-activity database searches for larger activities, and BMPs consistent with relevant federal and state regulations for all activities—would continue in force, although compliance would be performed on a case-by-case basis as projects

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
		the proposed action, but could be somewhat greater because of the enhanced compensation requirements. However, because PG&E's existing cultural resources program would continue in force under Alternative 2—including pre-activity database searches for larger activities, and BMPs consistent with relevant federal and state regulations for all activities—impacts are nonetheless expected to be less than significant.	the proposed action, although they could be somewhat reduced because the reduced number of covered species could reduce compensation acreage somewhat. Because the same protective measures would apply—including pre-activity database searches for larger activities, and BMPs consistent with relevant federal and state regulations for all activities—impacts are expected to be less than significant. .	arise. Consequently, O&M and minor construction impacts on cultural resources under the No Action Alternative would be very similar to those described for the proposed action. Impacts related to ground disturbance for habitat enhancement, restoration, or creation are speculative to predict because the nature and location of compensation parcels remains speculative at this time.
Paleontological Resources	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Consequently, impacts on paleontological resources would be essentially the same under Alternative 1 as those described for the proposed action, and the same mitigation strategy would apply.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action. Differences between Alternative 2 and the proposed action would center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). As with Alternative 1, impacts on paleontological resources would be very similar under Alternative 2 to those described for the proposed action, and the same mitigation strategy would apply.	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action. The key difference between Alternative 3 and the proposed action would relate to the number of species covered under the Alternative 3 (reduced by comparison with the proposed HCP, as described in Chapter 2). Impacts on paleontological resources would be very similar under Alternative 3 to those described for the proposed action, and the same mitigation strategy would apply.	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new or additional environmental commitments would be put in place. However, because the activities most likely to affect paleontological resources would not change substantially, paleontological impacts would be essentially the same as those described for the proposed action. The same mitigation strategy would apply.
Transportation and Circulation	Alternative 1 would enable the same program of O&M and minor construction activities described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 1 would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR for the proposed action, and compensation ratios for loss or disturbance of habitat would be the same as under the proposed action. The key difference between the proposed action and Alternative 1 is an additional level of stringency associated with the implementation of AMMs at a lower level of effect than under the proposed action, with the intent of reducing take. As discussed in Chapter 2 (*Proposed Action and Alternatives*), the AMMs implemented under Alternative 1 would be the same as those described above for the proposed HCP. However, under Alternative 1, AMMs for certain activities would be implemented at a lower level of disturbance. Although the level of take would be reduced because of the increased stringency associated with implementation of the AMMs, compensation is expected to be similar under both alternatives because compensation acreages would be calculated based on acreage affected, not on level of take. Consequently, under Alternative 1, impacts on traffic would be similar to those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 2 would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR for the proposed action. Differences between Alternative 2 and the proposed action center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). Under Alternative 2, assuming the same level of habitat disturbance, overall compensation needs would likely be greater than under the proposed action. Thus, as identified in Chapter 3 (*Land Use and Planning*), Alternative 3 would probably result in the establishment of a greater number of preserves, or preserves that encompass larger geographic areas, compared to the proposed action. Criteria for identifying suitable compensation lands would remain the same under Alternative 2, and selection of appropriate compensation lands would be subject to the same USFWS and DFG approval process. Thus, as the demand for compensation lands increases, availability of lands that support the appropriate habitat types would decrease, both within and outside of PG&E ROWs. Where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would still be available (e.g., purchase of mitigation credits, donations, and enhancement), and might be used to a greater extent; reliance on compensation options other than acquisition by purchase or easement might offset some of the difference in compensation ratios. However, Alternative 2's enhanced compensation requirements would probably still result in greater overall compensation requirements and hence a greater number and/or larger acreage of preserves. Thus, impacts on traffic under Alternative 2 would be similar to but somewhat greater than those described for the proposed action.	Alternative 3 would enable the same program of O&M and minor construction activities described for the proposed action, and would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR. The key difference between Alternative 3 and the proposed action relates to the number of species covered under Alternative 3 (reduced by comparison with the proposed action, as described in Chapter 2). Reducing the number of covered species could result in the establishment of a smaller number of preserves or preserves that encompass smaller geographic areas by comparison with the proposed action. At the same time, separate, case-by-case consultation for level of effect and compensation needs could be necessary for noncovered species, depending on the species potentially affected, and their status at the time of the proposed activity. It is difficult to determine the precise effect that this approach would have on traffic since locations and other details about specific compensation lands are unknown at this time. However, because some compensation requirements might be assessed on a case-by-case basis, Alternative 3 would have the potential to result in a greater number of smaller preserve areas, potentially requiring slightly increased management-related trips while distributing traffic effects related to use and management of preserves over a greater area. In summary, impacts on traffic would likely be similar under Alternative 3 to those described for the proposed action, but could be somewhat greater overall.	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new or additional environmental commitments would be put in place. Individual actions affecting suitable habitat for listed special-status species would be assessed through case-by-case consultation with USFWS and DFG for level of effect and compensation needs. Because the compensation requirements for habitat disturbance would be assessed on a case-by-case basis, smaller parcels of land would likely be identified for enhancement at any given time; case-by-case assessment could also result in the establishment of a greater number of preserves. This is similar to but more extreme than the case described above for Alternative 3, where most compensation would likely occur under the auspices of an HCP process. The availability of desirable compensation lands is expected to decrease over time, as lands are used for compensation or other purposes. However, as described for the action alternatives, where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would likely still be available (e.g., purchase of mitigation credits, donations, and enhancement), and might be used to a greater extent. It is difficult to determine the precise effect that this approach would have on traffic since locations and other details about specific compensation lands are unknown at this time. However, since the resulting compensation requirements would be assessed on a case-by-case basis, Alternative 4 could result in a greater number of smaller contiguous preserve areas, requiring more management-related trips but distributing traffic effects over a wider area. Thus, impacts on traffic would likely be similar under the No Action Alternative to those described for the proposed action, but could be somewhat greater overall.
Noise and Vibration	Because O&M and minor construction activities would be the same under the proposed action and all alternatives, noise generation would be similar for all alternatives. There could be some in-practice difference in long-term noise generation related to increases/decreases in the extent of compensation lands under the various alternatives, and thus in the noise-generating activities (notably, earthwork) needed to manage them. However, it is impossible to predict the extent and type of management- or restoration-related earthwork needed under each alternative, because the location and condition of compensation lands cannot be identified at this time. Consequently, analysis of the (probably minor) differences in noise generation among the proposed action and alternatives would be speculative.			

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
Air Quality	O&M and minor construction activities would be the principal source of pollutant emissions associated with the proposed action, so analysis of the proposed action's effects on air quality focused on O&M and minor construction activities. As identified above for noise and vibration, there could be some in-practice difference in long-term pollutant generation related to variation in the extent of compensation lands and the equipment and ground disturbance needed to manage them. However, as identified above for noise, it is impossible to predict the extent and type of management activities needed under each alternative, or the exact equipment required, because the location and condition of compensation lands cannot be identified at this time. Consequently, analysis of the—probably minor—differences in air pollutant emissions among the proposed action and alternatives would be speculative. The potential air quality benefits would depend on the acreage of compensation lands, and thus can be assessed comparatively at this time. Alternative 1 would focus on reducing take by comparison with the proposed action, through increased stringency in implementing the HCP's AMMs. However, although the level of take would be reduced, compensation needs are expected to be similar under both alternatives because compensation acreages would be calculated based on acreage affected, not level of take. Thus, air quality benefits would be very similar under Alternative 1 to those expected for the proposed action.	Alternative 2 would offer increase air quality benefits relative to the proposed action and other alternatives because of its increased requirement for compensation lands and the potential to preserve larger areas of vegetated open space.	Air quality benefits related to preservation of vegetated open space would be reduced under Alternative 3 by comparison with the other action alternatives, because the reduced list of covered species is expected to result in smaller compensation requirements.	It is difficult to predict the acreages required for compensation—and hence the potential for air quality benefits—under the piecemeal conservation approach that would result from implementing Alternative 4. However, it is unlikely that compensation acreages and the corresponding air quality benefits resulting from preservation of vegetated open space would match or exceed those anticipated under Alternative 2.
Public Health and Environmental Hazards	Alternative 1 would enable the same program of O&M and minor construction activities as that described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Alternative 1 would be subject to the same regulatory requirements and would incorporate the same program of training and BMPs for hazardous materials handling identified in this EIS/EIR for the proposed action. Consequently, impacts related to hazardous materials and public health and safety would be essentially the same under Alternative 1 as those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities as that described for the proposed action. Differences between Alternative 2 and the proposed action would center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). Alternative 2 would be subject to the same regulatory requirements and would incorporate the same program of training and BMPs for hazardous materials handling identified in this EIS/EIR for the proposed action. As with Alternative 1, impacts related to hazardous materials and public health and safety would be essentially the same under Alternative 2 as those described for the proposed action.	Alternative 3 would enable the same program of O&M and minor construction activities as that described for the proposed action. The key difference between Alternative 3 and the proposed action would relate to the number of species covered under the Alternative 3 (reduced by comparison with the proposed HCP, as described in Chapter 2). Alternative 3 would be subject to the same regulatory requirements and would incorporate the same program of training and BMPs for hazardous materials handling identified in this EIS/EIR for the proposed action. As with Alternatives 1 and 2, impacts related to hazardous materials and public health and safety would be essentially the same under Alternative 3 as those described for the proposed action.	Under the No Action Alternative, PG&E would continue its existing program of O&M and minor construction activities unchanged. No HCP would be implemented, and any habitat compensation needed would occur on a case-by-case, piecemeal basis. However, PG&E would still implement their standard methods and techniques for carrying out O&M activities, including the existing program of training and BMPs for hazardous materials handling. Therefore, impacts related to hazardous materials and public health and safety would be essentially the same under Alternative 4 as those described for the proposed action.
Recreation	Alternative 1 would enable the same program of O&M and minor construction activities described for the proposed action, with minor differences specific to commitments for the protection of biological resources. Compensation ratios for loss or disturbance of habitat would be the same as under the proposed action; the key difference between the proposed action and Alternative 1 is an additional level of stringency associated with the implementation of AMMs at a lower level of effect than under the proposed action, with the intent of reducing take. As discussed in Chapter 2 (*Proposed Action and Alternatives*), the AMMs implemented under Alternative 1 would be the same as those described above for the proposed HCP. However, under Alternative 1, AMMs for certain activities would be implemented at a lower level of disturbance (for more detailed information about AMMs under the proposed action and the alternatives, see Chapter 2). Although the level of take would be reduced because of the increased stringency in implementing the HCP's AMMs, compensation is expected to be similar under both alternatives because compensation acreages would be calculated based on acreage affected, not level of take. Consequently, under Alternative 1, impacts related to recreational resources would be similar to those described for the proposed action.	Alternative 2 would enable the same program of O&M and minor construction activities described for the proposed action. Differences between Alternative 2 and the proposed action center on compensation ratios for habitat disturbed or lost (increased under Alternative 2 by comparison with the proposed action). As identified in Chapter 3 (*Land Use and Planning*), increased compensation ratios could result in the establishment of a greater number of preserves or preserves that encompass larger geographic areas as compared to those established under the proposed action. Under Alternative 2, assuming the same level of habitat disturbance, overall compensation requirements could be greater than under the proposed action, possibly resulting in greater potential to disturb recreational facilities and opportunities. Criteria for identifying suitable compensation lands would remain the same under Alternative 2 (see Chapter 4 of the proposed HCP in Appendix B), and selection of appropriate compensation lands would be subject to USFWS and DFG approval. Nonetheless, as the demand for compensation lands increases, availability of lands that support the appropriate habitat types can be expected to decrease, both within and outside of PG&E ROWs. Where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options are available (e.g., purchase of mitigation credits, donations, and enhancement). Implementation of compensation options other than acquisition by purchase or easement may offset some of the	Alternative 3 would enable the same program of O&M and minor construction activities described for the proposed action, and would enact the same additional environmental commitments for other resource areas identified in this EIS/EIR. The key difference between Alternative 3 and the proposed action relates to the number of species covered under Alternative 3 (reduced by comparison with the proposed action, as described in Chapter 2). Depending on their status at the time, other species might be subject to state, and possibly also federal, requirements for impact assessment and compensation, which would need to be addressed on a case-by-case basis. Reducing the number of HCP covered species could result in the establishment of a lesser number of preserves or preserves that encompass smaller geographic areas (as compared to those established under the proposed action) as a result of activities enabled under Alternative 3. At the same time, additional, case-by-case assessment of compensation needs might be required for any individual activities identified as having the potential to affect noncovered special-status species. It is difficult to determine the precise effect that this approach would have on recreation since the species potentially involved, their listing status, and detailed compensation needs cannot be identified at this time. However, because Alternative 3 could require the assessment of at least some compensation needs on a case-by-case basis, it could result in the identification of smaller parcels of land (including ROW areas) for enhancement use, compared to the proposed action. Also, while Alternative 3 could result in smaller contiguous areas where access	Under the No Action Alternative, PG&E would continue its existing program of O&M activities unchanged. No HCP would be implemented, and no other new environmental commitments would be put in place. The following paragraphs describe the range of possible outcomes for recreation under the No Action Alternative. Individual actions affecting suitable habitat for listed species would be assessed through case-by-case consultation with USFWS and DFG for level of effect and associated compensation needs. Because the compensation requirements for habitat disturbance would be evaluated on a case-by-case basis, smaller parcels of land (including portions of ROW areas) would likely be identified for enhancement at any given time, but case-by-case consultation could also result in more numerous occurrences of closures or access limitations. This is similar to but more extreme than the case described above for Alternative 3, where most compensation would be expected to occur under the auspices of an HCP process. The availability of desirable compensation lands is expected to decrease over time, as lands are used for compensation or other purposes. However, as described for the action alternatives, where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options would likely still be available (e.g., purchase of mitigation credits, donations, and enhancement). Potential adverse effects on existing recreational opportunities could

Resource	Alternative 1—HCP with Reduced Take	Alternative 2—HCP with Enhanced Compensation	Alternative 3—HCP with Reduced Number of Covered Species	Alternative 4—No Action
		difference in compensation ratios. However, Alternative 2 would still have the potential to permanently reduce recreational opportunities in the action area. Further, the enhanced compensation requirements under Alternative 2 could result in greater overall compensation requirements and as a result, a greater number and/or larger acreage of preserves. Consequently, impacts related to recreation would likely be slightly greater under Alternative 2 than those described for the proposed action.	may be limited or closed, more numerous occurrences of closures or access limitations could occur under Alternative 3. Depending on availability of appropriate habitat, multiple restricted access areas could potentially be scattered within the same recreational facility or distributed among several facilities throughout the action area. As the demand for compensation lands increases, availability of lands that support the appropriate habitat types can be expected to decrease, including areas within PG&E ROWs. Where appropriate and available compensation lands cannot be identified for purchase or easement, other compensation options are available (e.g., purchase of mitigation credits, donations, and enhancement); reliance on compensation options other than acquisition by purchase or easement could offset some of the difference in compensation needs. However, criteria for identifying suitable compensation lands would remain the same, and selection of appropriate compensation lands would be subject to DFG and possibly also USFWS approval, depending on the species involved. Alternative 3 would thus have some potential to permanently reduce recreational opportunities in the action area. Impacts would be similar under Alternative 3 to those described for the proposed action, but the case-by-case approach to compensation determination for impacts on noncovered species under Alternative 3 could result in a greater number of preserves, and could also result in greater restrictions on existing recreational opportunities. In summary, impacts related to recreation could be slightly greater under Alternative 3 compared to those described for the proposed action, but might also be slightly less, depending on the need for, and the outcomes of, case-by-case assessment outside the HCP process. Depending on the need for, and the outcomes of, separate case-by-case assessment outside the HCP process, impacts could also be slightly less than those identified for the proposed action.	be reduced under the No Action Alternative compared to the proposed action since suitable compensation lands might become more difficult to acquire on a case-by-case basis and payment-type compensation options might be used to a greater degree. It is difficult to assess the precise effect that this approach would have on recreation because locations and other details about specific habitat enhancement sites are unknown at this time, as are the actual compensation acreages that would be required. If payment-type compensation options were not emphasized, the case-by-case approach to compensation determination under the No Action Alternative could result in a greater number of preserves, and/or greater restrictions on existing recreational uses than the proposed action. Consequently, impacts related to recreation could also be greater under the No Action Alternative than those described for the proposed action.
Environmental Justice	Effects related to environmental justice are expected to be minimal under the action alternatives, as under the proposed action, and would not require mitigation.			Environmental justice impacts under the No Action Alternative, if any, are thus expected to be minimal, and would not require mitigation.
Socioeconomics	No socioeconomic effects have been identified under the proposed action or action alternatives.			Under the No Action Alternative, no HCP would be implemented, and ESA compliance would continue to be accomplished on a case-by-case basis. Consequently, any changes by comparison to existing conditions would be negligible, and mitigation would not be needed.
Growth Inducement	The proposed action and action alternatives would all enable the same program of service upgrades and expansion in support of planned growth. Under all alternatives, upgrades and expansions would be implemented only in response to identified need; thus, the proposed action and all action alternatives have been identified as growth accommodating rather than growth inducing.			Because the No Action Alternative would continue the same program of O&M and minor construction as the proposed action, it would also support planned growth, and thus has the same potential for growth accommodation (as distinct from growth inducement) as the proposed action and action alternatives.
Environmental Sustainability	Environmental sustainability would be very similar for all of the action alternatives to that described for the proposed action. However, Alternatives 1 and 2 would offer a slight advantage by providing a more coordinated/integrative approach to conservation planning.		Environmental sustainability would be very similar for all of the action alternatives to that described for the proposed action. However, Alternative 3 would be slightly less advantageous overall because it would offer less coordinated to conservation planning.	Under the No Action Alternative, no HCP would be implemented, and ESA compliance would continue to be accomplished on a case-by-case basis. This would be slightly less advantageous in terms of environmental sustainability than the proposed action and action alternatives, because it would not support coordinated conservation planning over the long term.

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
Land Use	Impact LUP1—Potential for O&M and minor construction activities to result in physical division of an established community or inconsistency with existing or planned land uses	No effect	No clear differentiation between alternatives	**Alternative 1**
	Impact LUP2—Potential for compensation options to result in physical division of an established community	Adverse	Alternative 1	
	Impact LUP3—Potential incompatibility of preserves with existing (onsite) land uses	Adverse	Alternative 1	
	Impact LUP4—Potential incompatibility of preserves with adjacent land uses	Adverse	Alternative 1	
	Impact LUP5—Potential inconsistencies between preserve land acquisition and local land use plans and policies	Adverse	Alternative 1	
	Impact LUP6—Potential conflicts with existing HCPs or NCCPs	No effect	No clear differentiation between alternatives	
Agricultural Resources	Impact AG1—Potential for the conversion of important farmland to nonagricultural uses due to O&M and minor construction activities	Little or no effect	No clear differentiation between alternatives	**Alternative 1**
	Impact AG2—Potential for the conversion of important farmland due to implementation of compensation options	Potentially somewhat adverse under NEPA; no effect under CEQA	Alternative 1	
	Impact AGR3—Potential to conflict with existing Williamson Act contracts	Adverse	Alternative 1	
Biological Resources	Impact BIO1—Potential disturbance or loss of natural vegetation	Beneficial; but avoidance of impacts is preferable to compensation	Alternative 1	**Alternative 1**
	Impact BIO2—Potential disturbance or loss of vernal pool habitat	Beneficial; but avoidance of impacts is preferable to compensation	Alternative 1	

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
	Impact BIO3—Potential disturbance or loss of covered special-status plant species and their habitat	Beneficial; but avoidance of impacts is preferable to compensation	Alternative 1	
	Impact BIO4—Potential disturbance or loss of covered special-status wildlife species and their habitat	Beneficial; but avoidance of impacts is preferable to compensation	Alternative 1	
	Impact BIO5—Potential loss of noncovered special-status plant species and their habitat	Probably beneficial	No clear differentiation between alternatives	
	Impact BIO6—Potential effects on noncovered special-status wildlife species and their habitat	Probably beneficial	No clear differentiation between alternatives	
	Impact BIO7—Potential effects on aquatic habitat as a result of inchannel work	No effect	No clear differentiation between alternatives	
	Impact BIO8—Potential disturbance or loss of common wildlife species and their habitats	Probably beneficial	No clear differentiation between alternatives	
	Impact BIO9—Potential to spread invasive nonnative plant species	No effect	No clear differentiation between alternatives	
Aesthetics	Impact AES1—Potential for adverse effects on visual resources, visual character, or visual quality as a result of O&M activities	No effect	No clear differentiation between alternatives	**Alternative 2**
	Impact AES2—Potential for adverse effects on visual resources associated scenic highways and other designated scenic vistas as a result of new minor construction	No effect	No clear differentiation between alternatives	
	Impact AES3—Potential for medium- and long-term degradation of visual character of public viewshed as a result of vegetation removal and earthwork for new minor construction	No effect	No clear differentiation between alternatives	
	Impact AES4—Potential for long-term degradation of region’s visual resources through introduction of built elements	No effect	No clear differentiation between alternatives	

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
	Impact AES5—Potential introduction of new substantial sources of light or glare	No effect	No clear differentiation between alternatives	
	Impact AES6—Potential introduction of substantial new shading on adjacent parcels	No effect	No clear differentiation between alternatives	
	Impact AES7—Aesthetic enhancement as a result of habitat compensation	Beneficial	Alternative 2	
Geology and Soils	Impact GEO1—Potential for damage to new or upgraded facilities as a result of surface fault rupture	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
	Impact GEO2—Potential for damage to new or upgraded facilities as a result of seismic groundshaking	No effect	No clear differentiation between alternatives	
	Impact GEO3—Potential for damage to new or upgraded facilities as a result of seismically induced liquefaction or other seismic ground failure	No effect	No clear differentiation between alternatives	
	Impact GEO4—Potential for damage to new or upgraded facilities as a result of slope failure; potential for construction activities to increase slope failure hazard	No effect	No clear differentiation between alternatives	
	Impact GEO5—Risks to new or upgraded facilities as a result of construction on expansive soils	No effect	No clear differentiation between alternatives	
	Impact GEO6—Potential for proposed action to result in accelerated soil erosion	No effect	No clear differentiation between alternatives	
	Impact GEO7—Potential loss of topsoil resources	No effect	No clear differentiation between alternatives	
Water Quality	Impact WR1—Potential to divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake	Beneficial	Alternative 2	**Alternative 2**
	Impact WR2—Potential for alteration of existing drainage patterns, increasing flood risk and/or erosion and siltation potential	Beneficial	Alternative 2	

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
	Impact WR3—Potential for increased flood risks as a result of facilities installation.	No effect	No clear differentiation between alternatives	
	Impact WR4—Potential for increased stormwater runoff, and corollary effects	Beneficial	Alternative 2	
	Impact WR5—Potential use of streambed materials	No effect	No clear differentiation between alternatives	
	Impact WR6—Potential for reduction in groundwater recharge	Beneficial	Alternative 2	
	Impact WR7—Potential temporary degradation of surface water quality as a result of ground disturbance during O&M and construction activities	No effect	No clear differentiation between alternatives	
	Impact WR8—Potential temporary degradation of surface water quality as a result of inchannel work.	No effect	No clear differentiation between alternatives	
	Impact WR9—Potential for degradation of surface and groundwater quality as a result of hazardous materials spills or releases	No effect	No clear differentiation between alternatives	
Cultural Resources	Impact CR1—Potential disturbance or destruction of cultural resources as a result of O&M activities	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
	Impact CR2—Potential disturbance or destruction of cultural resources as a result of minor construction activities	No effect	No clear differentiation between alternatives	
	Impact CR3—Potential impacts on cultural resources as a result of habitat enhancement, restoration, or creation	No effect	No clear differentiation between alternatives	
Paleontological Resources	Impact PAL1—Potential for damage to paleontological resources	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
Transportation and Circulation	Impact TR1—Potential to result in temporary construction-related traffic increases and traffic safety hazards (O&M, minor construction, and preserve enhancements)	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives; Alternative 1 possibly slightly preferable overall**

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
	Impact TR2—Potential long-term traffic increases and traffic safety hazards due to O&M activities and staffing at new facilities	No effect	No clear differentiation between alternatives	
	Impact TR3—Potential long-term traffic increases and traffic safety hazards due to activities at preserves	No effect	Alternative 1 slightly preferable	
	Impact TR4—Potential to result in inadequate parking capacity	No effect	No clear differentiation between alternatives	
	Impact TR5—Potential conflicts with transportation plans, programs, and planned projects	No effect	No clear differentiation between alternatives	
Noise and Vibration	Impact N1—Potential for temporary or permanent exposure of noise-sensitive land uses to elevated noise levels	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
	Impact N2—Potential for temporary or permanent exposure of noise-sensitive land uses to elevated vibration levels	No effect	No clear differentiation between alternatives	
Air Quality	Impact AIR1—Potential to generate increased pollutant emissions during O&M activities	No effect	No clear differentiation between alternatives	**Alternative 2**
	Impact AIR2—Potential to exceed federal General Conformity thresholds	No effect	No clear differentiation between alternatives	
	Impact AIR3—Air quality enhancement as a result of habitat compensation	Beneficial	Alternative 2	
Public Health and Environmental Hazards	Impact PH1—Potential to create a hazard to the public or the environment through routine transport, use, or disposal of hazardous materials other than herbicides; potential for inadvertent spills or releases of hazardous materials other than herbicides	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
	Impact PH2—Potential to create a hazard to the public or the environment through routine transport, use, or disposal of herbicides; potential for	No effect	No clear differentiation between alternatives	

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
	inadvertent spills or releases of herbicides			
	Impact PH3—Potential for human or environmental exposure to hazardous materials as a result of ground disturbance on sites with known hazardous materials contamination	No effect	No clear differentiation between alternatives	
	Impact PH4—Potential to interfere with or impede the implementation of adopted emergency response plans; potential to interfere with emergency vehicle access or increase emergency services' response times	No effect	No clear differentiation between alternatives	
	Impact HC5—Potential handling of hazardous materials within 0.25 mile of an existing or planned school	No effect	No clear differentiation between alternatives	
Recreation	Impact REC1—Potential to result in, construct, or expand recreational facilities that might have an adverse physical effect on the environment	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
	Impact REC2—Potential to increase the use of recreational facilities accelerating or causing physical deterioration	No effect	No clear differentiation between alternatives	
	Impact REC3—Potential for reduced recreational opportunities due to O&M and short-term construction activities	No effect	No clear differentiation between alternatives	
	Impact REC4—Potential for reduced recreational opportunities due to installation of new, improved, or expanded aboveground facilities or structures	No effect	No clear differentiation between alternatives	
	Impact REC5—Potential for reduced recreational opportunities due to implementation of compensation options	Adverse	Alternative 1	
	Impact REC6—Potential to provide new or enhanced recreational opportunities due to establishment of preserves or other compensation lands	Beneficial	Alternative 2 (benefit considered speculative)	

Resource	Impact	Effect of Increased Conservation Acreage on Impact—Beneficial or Adverse?	Environmentally Preferable Alternative by Impact	Environmentally Preferable Alternative for Resource Overall
Socioeconomics	No impacts identified	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**
Environmental Justice	No impacts identified	No effect	No clear differentiation between alternatives	**No clear differentiation between alternatives**

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Air Quality, Aesthetics, and Water Quality

Preservation and enhancement of open space would benefit air quality, aesthetics, and water quality. All of the action alternatives would offer a potential air quality benefit because they would preserve vegetated open space from development. They would also benefit surface- and groundwater resources by preserving natural drainage patterns and permeable natural surfaces, and limiting the area subject to recontouring, cultivation, development and other types of ground disturbance. All three action alternatives would also benefit aesthetic resources—the acreage required for compensation is expected to consistently exceed the actual acreage impacted, so net open space acreage would increase over the 30-year permit term; moreover, the preserve lands would consist of high quality open space presumably offering scenic advantages. Benefits related to open space preservation would occur under all of the action alternatives, but all three resources—air quality, water resources, and aesthetic resources—would receive the most benefit under Alternative 2, which would require greater mitigation acreages to satisfy its enhanced compensation ratios.

Land Use and Agricultural Resources

Although land use impacts are identified as incrementally less than significant (see Chapter 3), the potential for some level of incompatibility between preservation of mitigation lands and the need for planning flexibility renders a larger compensation ratio less desirable from the land use planning perspective. An increased compensation ratio is also viewed as more likely to be problematic where agricultural lands are involved (see Chapter 4); with larger acreages needed for compensation, the potential that agricultural (most likely grazing) lands would be required would increase. While using grazing lands for habitat compensation would protect them in perpetuity from urban development, and would thus preserve the physical characteristics that support agriculture, the commitment to manage these lands for the priority benefit of biological resources could restrict planning flexibility for future grazing use. In view of these constraints, Alternative 1 is preferable for land use and agriculture (Table 21-2); Alternative 2 is less desirable because of its enhanced compensation requirement. In addition, while Alternatives 3 and 4 could require fewer acres of conservation land at the outset, long-term conservation planning could be more difficult, potentially increasing the need to acquire lands on a shorter turnaround, which could in turn foster land use and agricultural incompatibilities that the more coordinated planning associated with the Alternatives 1 and 2 would avoid.

Recreation

Recreation is the only resource for which different impacts were evaluated as "preferring" different alternatives (Table 21-2).

Depending on the compensation needs identified, there is some potential that recreational lands could be acquired for compensation use, or that conservation

easements could be established such that recreational access is altered (see discussion under *Impact REC5—Potential for reduced recreational opportunities due to implementation of compensation options* in Chapter 15). The likelihood would be greatest under Alternative 2, which would require the largest compensation acreages. Alternatives 3 and 4 would require smaller "upfront" compensation acreages, but would offer less proactive conservation planning, potentially increasing the likelihood of effects on recreation. Alternative 1 would offer long-term planning and would reduce take by comparison with the proposed action, without increasing compensation acreages, so it is "preferred" for impacts related to reduction of recreation opportunities due to compensation needs.

All of the alternatives offer potential benefits with regard to new or enhanced recreational opportunities on compensation lands (see Impact REC3 in Chapter 15), but because of the larger compensation ratio associated with Alternative 2, it is "preferred" for these impacts.

To identify the alternative "preferred" overall for recreation, the relative likelihood and importance of anticipated detriments and benefits were compared. Because any recreational use associated with the preserves would be restricted to passive forms of recreation and would be strictly regulated, increased recreational opportunities (greatest under Alternative 2) are not expected to provide a clear or compelling benefit. The potential for reduced opportunities on recreational lands already in use (also greatest under Alternative 2) is similarly expected to be small, but was considered a sufficient concern to outweigh any potential benefit. As a result Alternative 1 was identified as preferable for recreation overall.

Biological Resources

Because of the proposed action's primary focus on protecting and conserving sensitive biological resources, all of the action alternatives would benefit the covered species, and would likely also offer corollary benefits for other species using the same and contiguous habitats, particularly in light of the commitment to provide permanent compensation for both temporary and permanent habitat effects. Alternative 1 would reduce take by comparison with the proposed action and the other action alternatives, through stricter application of AMMs. Alternative 2 would use AMMs to reduce take, but would further emphasize compensation for take that cannot be avoided, requiring the highest compensation ratios of any alternative. Alternatives 3 and 4 were evaluated as potentially less effective than either the proposed action or Alternatives 1 and 2 in reducing and compensating for take, because they would provide less coordinated and proactive conservation planning. Additional deficits could be associated with this decrease in efficiency.

Although both Alternative 1 and Alternative 2 would involve a combination of AMMs and compensation, the increased effort to reduce take of existing populations under Alternative 1 is evaluated as offering more reliable benefits for

the covered species than Alternative 2's enhanced compensation requirement. This is because reducing take would help to ensure the health of known, existing populations of the covered species. By contrast, there is no way to guarantee that the desired species would be successful on compensation lands. Similarly, enhanced compensation under Alternative 2 could offer benefits for noncovered special-status species, but any such benefits are considered more tenuous than those for covered species, because compensation would be specifically designed to benefit the covered species—noncovered species might or might not use compensation lands, and beneficial outcomes for noncovered species would represent an unintentional corollary of compensation for impacts on covered species' habitat. Enhanced compensation under Alternative 2 would offer greater benefits for native vegetation in general, and probably also for common species, which are assumed to be widely present. However, because of the proposed action's priority focus on benefits to the covered species and greater certainty of benefits provided for these species under Alternative 1, Alternative 1 is preferred for biological resources overall.

Other Resources

Impacts on several of the resources analyzed would be unaffected by the differences between the alternatives. These include geology and soils; cultural resources; paleontological resources; transportation and circulation; noise and vibration; public health and environmental hazards; and growth-related issues. Impacts on these resources would relate almost entirely to tasks performed for O&M and minor construction, which would be the same under all alternatives. Moreover, all impacts have been identified as less than significant for these resources (see discussions in Chapters 7, 9, 10, 11, 12, 14, and 19). As a result it is difficult to differentiate clearly between the alternatives as they relate to these resources.

No impacts were identified for socioeconomics or environmental justice under the proposed action or any of the alternatives. These resources are also considered not to support differentiation between the alternatives.

Environmentally Preferable/Environmentally Superior Alternative

As discussed in *Methodology* above, the environmentally preferable/ environmentally superior alternative is expected to be the one identified as preferable for the most resource areas—that is, the one that offers the best outcome overall for the most resources.

Alternative 1 was identified as preferable for land use and planning (because of the increased regionalization it would provide) and for biological resources (because of its emphasis on reduced take). It would also be preferable for agricultural resources and for recreation, which could be subject to increased constraints as compensation acreages increase under Alternative 2 and could

suffer under the less coordinated planning approach offered by Alternative 3 and the No Action Alternative. On the other hand, Alternative 2 is clearly preferable for resources benefited by increased acreages of open space—aesthetic resources, water resources (in particular, water quality), and air quality. Finally, for many of the resource areas analyzed, environmental effects would be comparable under all alternatives, and it is difficult to differentiate clearly between them.

In summary, Alternative 1 would offer the best outcome for a total of four resources, while Alternative 2 would offer the best outcome for a total of three resources, reflecting a slight advantage under Alternative 1. Resources without a clearly preferable alternative are considered not to bear directly on identification of an environmentally preferable approach. Because of the proposed action's focus on protection and conservation of sensitive biological resources, potential biological benefits were considered the deciding factor, and Alternative 1, which focuses on avoiding impacts on known populations of sensitive species through increased stringency in implementing AMMs, is identified as the environmentally preferable/environmentally superior alternative.

Comparison of Environmentally Superior Alternative and Proposed Action

Alternative 1 would reduce take by comparison with the proposed action, by applying AMMs more comprehensively and stringently. Thus, it would offer some level of biological benefit over the proposed action. However, because Alternative 1 would require preactivity surveys for a wide variety of fairly minor activities, it would likely restrict the seasons during which some O&M activities could be conducted and thus could impede the timely performance of O&M and/or interfere with emergency repair activities. This could result in conflicts with CPUC safety regulations, and could also compromise PG&E's ability to deliver reliable electrical and natural gas service. In addition, PG&E's budget analyses suggest that full implementation of Alternative 1 would be prohibitively expensive. Thus, although potentially feasible, Alternative 1 has been evaluated as difficult to implement reliably in practice, and potentially counter to PG&E's legal responsibilities under CPUC regulations.

The proposed action would avoid these conflicts and support PG&E's service delivery responsibilities, while providing adequate protection for the covered species and their habitats. It offers the additional advantages of more manageable costs, and would still yield substantial biological benefits by comparison with existing procedures.